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παραδοσιακή γενετική: to be "a leader to the Greeks and a despot to the barbarians, to look after the former as after friends and relatives, and to deal with the latter as with beasts or plants" παραδοσιακή γενετική

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Moniz 1949 Nobel Prize "for his discovery of the therapeutic value of leucotomy in certain psychoses."

Moniz 1949 Nobel Prize "for his discovery of the therapeutic value of leucotomy in certain psychoses."

[2] Moniz 1949 Nobel Prize "for his discovery of the therapeutic value of leucotomy in certain psychoses."

leukotomy 1949 Nobel Prize "for his discovery of the therapeutic value of leucotomy in certain psychoses."

Leukotomy

Moniz 1949 Nobel Prize "for his discovery of the therapeutic value of leucotomy in certain psychoses." leukotomy 1949 Nobel Prize "for his discovery of the therapeutic value of leucotomy in certain psychoses."

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Leukotomy 1949 Nobel Prize "for his discovery of the therapeutic value of leucotomy in certain psychoses."

1 personalities mental diseases

2 leukotomy 1949 Nobel Prize "for his discovery of the therapeutic value of leucotomy in certain psychoses."

3 personality intelligence Walter Freeman 1949 Nobel Prize "for his discovery of the therapeutic value of leucotomy in certain psychoses."

personality intelligence personalities mental diseases personality intelligence personality intelligence

personality intelligence personalities mental diseases personality intelligence BRAIN Initiative

Leukotomy 1949 Nobel Prize "for his discovery of the therapeutic value of leucotomy in certain psychoses." Leukotomy 1949 Nobel Prize "for his discovery of the therapeutic value of leucotomy in certain psychoses." SyNAPSE Human Brain Project BRAIN Initiative [4]

Turing Test Nature AlphaGo Zero superhuman superhuman generic human

Leukotomy 人类の脳を切り取る Nature が AlphaGo Zero を超人間レベルに評価する
論文は peer review が Peer review で評議された [5]。

leukotomy

AlphaGo Zero vs Superhuman

Nature 2016 AlphaGo Zero 达到了超人类的性能，超人类的棋艺，通用的人类棋艺，超人类的棋艺。

AlphaGo Zero は AlphaGo Master より superhuman レベルの棋力を達成する
唯一の game である。これは、generic な superhuman レベルの game を達成
するための最初の試みである。

AlphaGo Zero は、AlphaGo Zero の開発者である DeepMind の研究者たちによって開発された強化学習アルゴリズムです。このアルゴリズムは、自身でゲームを学ぶことで棋力を向上させる能力を持っています。AlphaGo Zero は、围棋の世界王者である Ke Jie と対戦し、彼を破ったことで注目を集めました。

4 [6]

AlphaGo Zero

二、深度学习

深度学习是 Turing Machine 的一种实现形式，AlphaGo 是深度学习的一个典型应用。AlphaGo Zero 和 AlphaGo Master 都是 AlphaGo Zero，AlphaGo Zero 和 AlphaGo Zero 相同 [8]。

AlphaGo Zero 和 Deep Blue 都是 AlphaGo Zero 的一个分支，Deep Blue 由 Demis Hassabis [9] 提出，AlphaGo Zero 和 superhuman 都是 Deepmind 提出的，Deepmind [10]。

深度学习在自动驾驶、围棋等领域都有广泛应用，Deepmind 在自动驾驶领域也有应用。

三、深度学习的应用

深度学习：“Go gaming is strictly defined within a very small space. Industrial automations are typically designed in well controlled environments, but not strictly defined. Car driving is regulated, but the environment is not well controlled”。

深度学习在自动驾驶领域的应用包括：AlphaGo Zero、Deepmind、Waymo 等。

深度学习在自动驾驶领域的应用包括：SAE level 5、SAE level 4、SAE level 4、SAE level 4。

深度学习在自动驾驶领域的应用包括：19X19、AlphaGo Zero、Deepmind、Waymo 等。

深度学习在自动驾驶领域的应用包括：address、737Max、Deepmind、Waymo 等。

深度学习在自动驾驶领域的应用包括：adversarial testing、autoML、Deepmind、Waymo 等。

深度学习在自动驾驶领域的应用包括：Deepmind、Waymo、AlphaGo Zero、Deepmind、Waymo 等。

深度学习在自动驾驶领域的应用包括：70%、10%、Deepmind、Waymo 等。

Algorithmic

Turing Machine Universal approximation theorem
Universal approximation theorem
Universal approximation theorem

Technological Singularity
Technological Singularity

Leukotomy

Leukotomy

1949 Leukotomy leukotomy
Leukotomy

Turing Test AI A Modern Approach Wind Tunnel
approach Nature AlphaGo Zero superhuman
Technological Singularity In Math We Trust "Occam's Razor"
[12] [13]

Karl Popper
Karl Popper

Occam's Razor
Occam's Razor
[14]

Occam's Razor Occam's Razor

Occam's Razor
Occam's Razor
Occam's Razor

Occam's Razor
Occam's Razor Leukotomy
Leukotomy

Gu Test
Gu Test

A Progressive Measurement Of Generic Artificial Intelligence
Gu Test A Progressive Measurement Of Generic Artificial Intelligence

common sense

common sense

common sense

common sense [15]

common sense [16]

common sense [17]

common sense

common sense

common sense

common sense commonsense

common sense

common sense [18]

common sense · common

A horizontal row of 30 small, identical rectangular boxes arranged side-by-side. These boxes are likely used for input fields or buttons in a user interface.

A horizontal row of fifteen empty square boxes, intended for children to draw or color in.

〔19〕
〔20〕

A horizontal row of 20 small, empty rectangular boxes arranged in a single row.

A horizontal row of fifteen empty square boxes, each with a black border, intended for children to draw or color in.

A horizontal row of 20 empty rectangular boxes, likely for students to write their names in during a classroom activity.

A horizontal row of 30 empty rectangular boxes, each with a thin black border, intended for handwritten responses.

Chinese room

dataset SQuAD CoQA QuAC GLUE Chinese room

NLVR² Natural Language for Visual Reasoning for Real testset GLUE generic

Testsets AI: A Modern Approach

guideline judgement

Chinese room 中国房间

The Third Wave 人工智能
人工智能
人工智能
人工智能

人工智能
人工智能
人工智能
AlphaGo
self-driving car
人工智能
人工智能

The Third Wave 人工智能
人工智能
人工智能
人工智能

人工智能
人工智能
人工智能
人工智能

人工智能
Total Quality Management
人工智能

人工智能
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Leukotomy 人工智能
AI: A Modern Approach
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人工智能
“人工智能”
人工智能
[21]
人工智能

人工智能
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AI
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AlphaGo Zero
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AI: A Modern Approach
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AI: A Modern Approach
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AI
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人工智能
人工智能
Chinese room
人工智能
人工智能

judgement

judgement

judgement

[22]

judgement

judgement

judgement

1989 “judgement”

AlphaGo [23] Socratic judgement

2015 Bohunt Chinese School BBC Are Our Kids Tough Enough ?

2012 PISA 2015 2018 PISA

Bohunt Chinese School Bohunt [24]

PISA

Bohunt Confucianism

Bohunt

Bohunt

Bohunt

discipline competition

discipline competition

Discipline competition

competition

“”

“”

[25]

[26]Leukotomy

Technological Singularity AI: A Modern Approach

—

“**技术奇点**”
[27]□

“**技术奇点**”
指技术发展到一个临界点，之后将进入一个指数级增长的阶段。

“**技术奇点**”
指技术发展到一个临界点，之后将进入一个指数级增长的阶段。

“**技术奇点**” Technological Singularity
指技术发展到一个临界点，之后将进入一个指数级增长的阶段。

“**技术奇点**”
指技术发展到一个临界点，之后将进入一个指数级增长的阶段。

“**科学**”

“**科学**” Karl Popper
指通过观察和实验来验证假设的科学方法。

“**科学**”
指通过观察和实验来验证假设的科学方法。

“**科学**”
指通过观察和实验来验证假设的科学方法。

BRAIN Initiative
指通过观察和实验来验证假设的科学方法。

“**科学**”
指通过观察和实验来验证假设的科学方法。

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□

“**科学**”
指通过观察和实验来验证假设的科学方法。

“**科学**”
指通过观察和实验来验证假设的科学方法。

□ The Development of Liberal Arts and Sciences
指通过观察和实验来验证假设的科学方法。

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[1] 指通过观察和实验来验证假设的科学方法  
“Aristotle... was the first to formulate a precise set of laws governing the rational part of the mind.”(On page 5)□

“**科学**”  
指通过观察和实验来验证假设的科学方法。

Leucotomy in England and Wales, 1942-1954

[2] Leucotomy in England and Wales, 1942-1954  
Leucotomy in England and Wales

Leucotomy in England and Wales

Leucotomy in England and Wales

[3] Leucotomy in England and Wales, 1942-1954  
9284 cases 41% improved  
28% worsened 25% same 4% died

personality □ intelligence 25% improved  
personality □ intelligence 25% worsened clinical condition 41% improved  
28% same 25% worsened clinical condition personality □ intelligence 4% died

leucotomy

Renato M.E. Sabbatini Even lobotomy's proponents admitted that only one third of the operated patients would improve, while one-third remained the same, and one-third got worst Leucotomy in England and Wales, 1942-1954 <http://www.cerebromente.org.br/n02/historia/lobotomy.htm>

one third would improve □ one-third remained the same □ clinical condition □ personality □ intelligence

[4] SyNAPSE ACM Gordon Bell prize Dharmendra Modha thank you note

Henry Markram □ SyNAPSE □ announcement □ mass deception of the public  
SyNAPSE □ Henry Markram □ "It is not impossible to build a human brain and we can do it in 10 years." Human Brain project

NIH Director □ moonshot □ BRAIN Initiative □ dynamic brain activity map □ neurosciences □

moonshot □ moonshot □ moonshot

NIH Director

NIH Director

[5] NIH Director

peer review peer review

AlphaGo Zero superhuman generic human

[6] AlphaGo Zero

AlphaGo Google AlphaGo Zero AlphaGo Human level artificial intelligence

AlphaGo Google AlphaGo Zero Human level artificial intelligence

Demis Hassabis AlphaGo Zero Deepmind

[7] Demis Hassabis AlphaGo Zero Deepmind

Deepmind ethics board Deepmind Google AlphaGo

[8] AlphaGo Zero AlphaGo Master AlphaGo Zero AlphaGo Master 16 AlphaGo Zero 18 AlphaGo Zero 14 16 45

1) Nature Magazime AlphaGo Deepmind AlphaGo Zero AlphaGo Master

2) AlphaGo Zero local trap

[9] The Guadian a meta-solution to any problem

"Demis Hassabis ... is deadly serious when he tells me he is on a mission to 'solve intelligence, and then use that to solve everything else'.

.....

'One way of thinking of AGI is as a process that will automatically convert

unstructured information into actionable knowledge. What we're working on is potentially a meta-solution to any problem."",

from <https://www.theguardian.com/technology/2016/feb/16/demis-hassabis-artificial-intelligence-deepmind-alphago>

[10] 破解 Go Deep Blue AlphaGo AlphaGo AlphaGo

[11] 通用逼近定理 Universal approximation theorem Turing Machine

[12] In God We Trust God Trust

In Math We Trust In Math We Trust

[13]

[14]

[15]

[16]

[17]

1819 Ferdinand Schweikart

1830 Ferdinand Schweikart

Ferdinand Schweikart

A horizontal row of 20 empty square boxes, likely used for a survey or form.

[20] 二〇一〇年十一月三十日

wikipedia

[21] 二〇一〇年十一月三十日  
二〇一〇年十一月三十日

“……”  
“……”

mainframe personal computer smartphone smartphone  
smartphone

IT 信息  
技术

“…………”“…………”“…………”“…………”

“**中華人民共和國**”和“**中國人民民主專政**”兩句被刪去。

100 100 60

[23] 『』“”

“我就是想让你知道，你不是唯一一个被我爱着的人。”

[24] ““上海人和外国人的冲突”BBC 新闻”<http://shanghai.xinmin.cn/xmsq/2016/04/18/29861595.html>”

[25] 『中華人民共和國“十一五”全國農業和農村經濟發展規劃綱要』·『全國農業和農村經濟發展十一五綱要』

“”

“我”和“你”是两个完全不同的概念。

[26] 二〇一〇年十一月三十日  
二〇一〇年十一月三十日

[27] Nature AlphaGo Zero superhuman 60 60

# 自私的基因 The selfish Gene